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For: MULTI-FUNCTIONAL POWER SUPPLY FOR A HALL THRUSTER

ABSTRACT OF DISCLOSURE

5 A multi-functional power supply system for a Hall thruster including a thruster
assembly for providing a plasma discharge and a cathode assembly for providing
electrons. The cathode assembly includes an emitter, a keeper with a current limiting
device, and a heater. A magnetic field source is operatively associated with the cathode
assembly for generating a magnetic field to control the discharge. A plasma discharge
10 circuit creates a plasma and accelerates the plasma to produce thrust. A power supply is
connected to the keeper and the plasma discharge circuit and is connected to the heater
through a switching device responsive to a predetermined condition for interrupting the
power to the heater and simultaneously enabling the power supply to deliver power to the
keeper and the plasma discharge circuit to initiate production of thrust.